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d his


     (FILE 'HOME' ENTERED AT 14:11:02 ON 30 SEP 2000)

     FILE 'REGISTRY' ENTERED AT 14:11:06 ON 30 SEP 2000
L1            382 (0<PB AND 95<CU)/MAC

     FILE 'HCA' ENTERED AT 14:12:05 ON 30 SEP 2000
L2           1088 L1
L3            299 L2 AND (COPPER OR CU) AND (LEAD OR PB)
L4             17 L3 AND HEAT? AND CAST?
                  SELECT IPC
L4 1 2 3 5 7 9 12 16
L5         401696 E1-18

     FILE 'REGISTRY' ENTERED AT 14:21:51 ON 30 SEP 2000
L6            120 (0<PB<0.6 AND 99<CU)/MAC

     FILE 'HCA' ENTERED AT 14:22:53 ON 30 SEP 2000
L7            121 L6 AND (COPPER OR CU) AND (LEAD OR PB)
L8             97 L7 AND PB
                  SAVE L8 HCA/A
L9             16 L8 AND CAST?
                  SELECT L9 IPC 1 2 3 7 8 14
L10        256238 E19-26
                  E GUIXA JOSE/IN,AU
L11             1 E2
                  E GARCIA MIQUEL/IN,AU
                  E GARCIA M/IN,AU
L12           379 E4-12
                  E ESPIELL FERRAN/IN,AU
L13            27 E2-4
                  E FERNANDEZ MIQUEL/IN,AU
                  E ESPARDUCER ARACELI/IN,AU
L14             1 E2
                  E SEGAMA MERCE/IN,AU
                  E SEGAMA M/IN,AU
                  E CHIMENOS J/IN,AU
L15            10 E5
L16        256652 L15 OR L14 OR L13 OR L12 OR L11 OR L10 OR L9
L17        256645 L15 OR L14 OR L13 OR L12 OR L11 OR L10
L18           407 L15 OR L14 OR L13 OR L12 OR L11
L19             4 L18 AND (COPPER OR CU) AND (LEAD OR PB)

     FILE 'WPIDS' ENTERED AT 14:38:21 ON 30 SEP 2000
L20           193 L10 AND (COPPER OR CU) AND (LEAD OR PB) AND CAST?
L21             0 L20 AND (HEAT? 20W CAST?)
L22            74 L20 AND HEAT? AND CAST?
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AN 129:164740 HCA
TI **Copper** alloy articles having improved blanking workability for electric and electronic devices and their manufacture
IN Eguchi, Tatsuhiko; Hirai, Takao; Kojima, Manabu
PA Furukawa Electric Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10195562	A2	19980728	JP 1997-1802	19970109

AB The **Cu** alloy articles contain 0.002-0.5% of **Pb**, Bi, Ca, Sr, Ba, and/or Te. The following alloy articles contg. 0.002-0.5% of **Pb**, Bi, Ca, Sr, Ba, and/or Te are also claimed: (1) **Cu** -Zn alloys, (2) **Cu**-Zr alloys having Zr content 0.02-0.2%, (3) **Cu**-Sn alloys, (4) **Cu**-Sn-Ni alloys, (5) **Cu** -Sn-Ni-P alloys contg. Sn 1.5-2.5, Ni 0.1-0.3, and P .ltoreq.0.15%, (6) **Cu**-Fe alloys, (7) **Cu**-Fe-P alloys having Fe content 0.02-0.5% and P content 0.01-0.2%, (8) **Cu**-Fe-Zn-P alloys contg. Fe 1.0-2.6, Zn 0.05-2.0, and P 0.015-0.15%, (9) **Cu**-Cr alloys, or (10) **Cu**-Cr-Zr alloys. The title articles are manufd. by **casting**, hot-working, and cold-working the alloys having the above compns. at the following conditions: (a) cooling rate in **casting** .gtoreq.5.degree./s, (b) hot-working at 700-1000.degree., (c) rapid-cooling after hot-working at rate .gtoreq.10.degree./s, and (d) heating at 300-600.degree. for 30 s to 6 h during cold-working. The microalloying elements form compds. dispersed in the **Cu** matrixes, resulting in improved workability in blanking of the alloy articles.

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     (FILE 'HOME' ENTERED AT 14:11:02 ON 30 SEP 2000)

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L1           382 (0<PB AND 95<CU)/MAC

     FILE 'HCA' ENTERED AT 14:12:05 ON 30 SEP 2000
L2          1088 L1
L3           299 L2 AND (COPPER OR CU) AND (LEAD OR PB)
L4            17 L3 AND HEAT? AND CAST?
```

AN 130:128649 HCA
TI Rare earth-containing copper having high electric conductivity and its manufacture
IN Li, Renchun; Chen, Xinguo; Liao, Lejie; Yuan, Jiang
PA Gannan Casting and Forging Plant, Jiangxi Province, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1121534	A	19960501	CN 1995-104151	19950427

AB The title Cu contains Cu .gtoreq.99.756, rare earth metals 0.09-0.15, and impurities Bi, Sb, As, and Sn .ltoreq.0.002, Fe, Pb, S and Zn 0.005, Ni .ltoreq.0.006, and O .ltoreq.0.060%. The Cu is manufd. by refining a mixt. of 70-80% electrolytic Cu and 20-30% red Cu in a reducing atm. with slagging first at 1150.degree. and then at 1200.degree. by using glass and chloride as flux, adding **preheated** rare earth alloy to the molten Cu by pressing, **casting** at 1150-1170.degree. in a mold **preheated** to 80-100.degree., and heat treating by holding at 800 .+-. 10.degree. for 1-1.5 h. The manufd. rare earth-contg. Cu has an elec. cond. 96-98% IACS, softening temp. .gtoreq.280.degree., and tensile strength 450 MPa.

AN 129:7375 HCA
TI **Copper** alloy sheets and their manufacture for electronic equipment
IN Hirai, Takao; Eguchi, Tatsuhiko
PA Furukawa Electric Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10110228	A2	19980428	JP 1997-129582	19970520
PRAI	JP 1996-214685		19960814		

AB The **Cu** alloy sheets contain Ni 0.4-4.0, Si 0.1-1.0, .gtoreq.1 of Zn 0.05-1.5, Mg 0.01-0.5, Mn 0.01-0.5, and Ag 0.001-0.3 but 0.001-1.5 as sum, .gtoreq.1 of **Pb**, Bi, In, Sb, Ca, Te, P, Ba, and rare earth element 0.002-0.2, and S and O2 <0.005% each, and the size of **Cu** alloy crystd. materials or ppts. is <3 .mu.m while the grain size <10 .mu.m. **Cu** alloy having the above compn. is **cast** at a cooling rate of .gtoreq.5.degree./s to obtain ingots, **heated** to 800-950.degree., hot worked, quenched at .gtoreq.10.degree./s, and at least once cold rolled with **heat** treatment at 350-550.degree. for 10 min-24 h to obtain **Cu** alloy sheets suitable for making electronic equipment such as **lead** frame.

AN 124:349857 HCA
TI **Copper** bearing alloy and manufacture of steel composite having this alloy
IN Laschimke, Ralf; Burger, Maria
PA Fuerstlich Hohenzollernsche Werke Laucherthal Gmbh und Co., Germany
SO Ger. Offen., 5 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4437565	A1	19960425	DE 1994-4437565	19941020

AB The **Cu** alloy contains **Pb** 0.15-25, Ni 0.5-4.5, and Si 0.1-1.5%; **Pb** 10-20, Ni 2-4.5, and Si 0.5-1.2%; or **Pb** 15-18, Ni 3-4.5, and Si 1%. The Ni:Si wt. ratio in the alloy is 4-4.5 and esp. 4.2. The alloy is centrifugally **cast** on steel blank inductively **heated** to 940-1050.degree., and the **cast** part is hardened by slow cooling, **heating** at 450-600.degree. for 30-90 min, or by nitriding.

AN 106:22014 HCA
TI **Copper** alloys
IN Yamashita, Masao
PA Komatsu, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61127838	A2	19860616	JP 1984-248820	19841127

AB The **Cu** alloys contain 0.3-10.0 Zr and 0.2-10.0% **Pb**. The alloys have high m.p. and thermal cond., good fitting with the counterpart, and suitable hardness, and are useful as sliding bearings. Thus, a **Cu** alloy contg. 3 Zr and 1% **Pb** was melted, **cast**, soln. **heat** treated at 890.degree. for 1 h, and aged at 500.degree. to contain granular pptd. crystals and show Vickers hardness 95. Two **Cu** alloy plates were simultaneously contacted with a SUT 2 plate (diam. 130 mm), and a sliding test was carried out with an engine oil lubricant to show seizure surface pressure 160 kg/cm2, vs. 80 kg/cm2 for a conventional high-strength brass composed of **Cu** 63.3, Zn 33.0, Mn 2.3, **Pb** 0.5, and Si 0.9%.

AN 104:211446 HCA
TI High-strength **copper** alloys having electric conductivity
IN Miyashita, Hirohito; Kamio, Morinori; Tsuji, Masahiro
PA Nippon Mining Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 60245752	A2	19851205	JP 1984-101722	19840522

AB The elec. conductive **Cu** alloys contain Sn 0.8-4.0, P 0.01-0.4, Fe 0.05-1.0, and .gtoreq.1 of Al, Hf, Be, Mo, Te, **Pb**, Co, Zr, Nb, B, Mg, Mn, Si, Sb, Ti, In, and/or As 0.01-1.0, with O impurity .ltoreq.0.0020%. The alloys have a high thermal cond., **heat** resistance, workability, coating adhesion, and corrosion resistance, and they are useful for **lead** frames of semiconductor devices or conductive spring parts. Thus, **Cu** alloy contg. Sn 1.0, P 0.04, Fe 0.08, Al 0.10, Hf 0.10, and O 0.0012% was induction melted, **cast**, and hot-rolled at 800.degree. into plate 4 mm thick. The plate was surface ground, cold-rolled into a sheet 1.0 mm thick, annealed at 500.degree., and cold-rolled into a sheet 0.8 mm thick. Elec. cond. of sheet was 39% IACS, tensile strength 42.4 kg/mm2, elongation 11%, and softening point 460.degree.. The sheet showed a good solderability, and no blistering after coating with Ag 3.mu. thick.

AN 90:173115 HCA
TI Fine **copper** alloy wire for electric conductor
IN Komata, Kenichi; Inoue, Sadao; Uno, Naoki
PA Furukawa Electric Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53140223	A2	19781207	JP 1977-55049	19770513
	JP 60049706	B4	19851105		

AB **Cast Cu** contg. 0.006-0.1% **Pb** is hot rolled, **heated** to 800-950.degree., water quenched, and drawn to .ltoreq.0.2 mm wire. Thus, a 50 kg ingot of **Cu**-0.07%**Pb** [**70047-52-8**] was hot rolled at 850.degree. to 8 mm diam., water-quenched, pickled, drawn to 2 mm, **heated** at 450.degree. in Ar, drawn to 0.08 mm, and annealed 2 h at 450.degree. in Ar. Two drawing breaks occurred in 40 kg of alloy, and the elec. cond. was 98.1% IACS, compared to 16 and 96.5% for **Cu**-0.15% **Pb**.

AN 127:22028 HCA
TI **Copper** alloys for electronic apparatus and their manufacture
IN Eguchi, Tatsuhiko; Hirai, Takao; Miyauchi, Michio
PA Furukawa Electric Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09078162	A2	19970325	JP 1996-2768	19960111
PRAI	JP 1995-173700		19950710		

AB The title **Cu** alloys contain Cr 0.1-0.4, Sn 0.05-2, Zn 0.05-2, **Pb** and/or Ca total 0.005-0.2, P < 0.01, S < 0.005 and O2 < 0.005%; size of crystd. or pptd. substances < 3 .mu.m, and grain size < 5 .mu.m. Optionally, the **Cu** alloys may also contain Zr 0.01-0.2%. The **Cu** alloys for electronic app. are manufd. by **casting** the above stated **Cu** alloys at cooling speed .gtoreq. 5.degree./s, hot working at 850-1000.degree., cooling at cooling speed .gtoreq. 10.degree./s, cold working at draft .gtoreq. 80%, heat treating at 400-500.degree. for 10 min to 24 h, cold working at draft .ltoreq. 50%, and final heat treating at 300-600.degree. for 10 min to 12 h in order. The **Cu** alloys have good strength, elec. cond., solderability, and punchability.

AN 105:83772 HCA
TI High-conductivity **copper** alloys having heat resistance and high strength
IN Shimizu, Sajiro; Fukuda, Takatoki; Nishiura, Sakiya; Imamura, Tatsuo; Kato, Masanori; Tanaka, Kanji
PA Tatsuta Electric Wire and Cable Co., Ltd., Japan; Nippon Mining Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61076636	A2	19860419	JP 1984-198101	19840920
	JP 62056218	B4	19871125		

AB Dil. **Cu** alloys contain Fe 0.02-1, P to give P/Fe wt. ratio of 0.15-0.18, and .gtoreq.1 of In .gtoreq.0.006, Sn .ltoreq.0.006, **Pb** .ltoreq.0.006, and Sb .ltoreq.0.006% for a total of 0.01-0.5%. The alloys are useful for elec. conductors in electronic equip., and for cables in industrial robots. Thus, molten **Cu** alloy contg. Fe 0.12, P 0.03, In 0.008, and Sn 0.003% was **cast** in a C mold to give ingot of 130 mm diam. The ingot was sectioned, trimmed, hot-extruded at 900.degree., and quenched in water to give a rod of 11 mm diam. The rod was cold-drawn into wire of 0.13 mm diam. The wire annealed 1 h at 450.degree. showed reversed bending 39 times, and had tensile strength 11% and elec. cond. 89% of IACS.

AN 90:173115 HCA
TI Fine **copper** alloy wire for electric conductor
IN Komata, Kenichi; Inoue, Sadao; Uno, Naoki
PA Furukawa Electric Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53140223	A2	19781207	JP 1977-55049	19770513
	JP 60049706	B4	19851105		

AB **Cast Cu** contg. 0.006-0.1% **Pb** is hot rolled, heated to 800-950.degree., water quenched, and drawn to .ltoreq.0.2 mm wire. Thus, a 50 kg ingot of **Cu**-0.07%**Pb** [**70047-52-8**] was hot rolled at 850.degree. to 8 mm diam., water-quenched, pickled, drawn to 2 mm, heated at 450.degree. in Ar, drawn to 0.08 mm, and annealed 2 h at 450.degree. in Ar. Two drawing breaks occurred in 40 kg of alloy, and the elec. cond. was 98.1% IACS, compared to 16 and 96.5% for **Cu**-0.15% **Pb**.

OPER DBP ENTERED 2/2/2000 MODIFIED 5/14/2001 ATTORNEYS PF / AAA / PPP / RAB PRINTED ON: 5/18/2001

Darby# 0G684US0 CNTRY US UNITED STATES NEW/CON NEW RELATED

PATS# P0G684US0 TYPE UTL SERIAL# 09/499,207 PATENT# STAT PENDING

TITLE MANUFACTURE OF COPPER MICROALLOYS SL RAB

CLIENT 2136 Casa L Duran Corretjer 1 CREF 5.276/AH SE yes SLDT 05/14/01

AGENT AREF CLAIMS ACCT

PRIOR 2/8/1999 MAIL 2/7/2000 FILE 2/7/2000 PUBL ISSUE EXP 2/7/2020 1ST 2/7/2000

ID	O	ACTION	BASE	DUE IN	DUE	EXTNS	FINAL	EXT	RESPONSE	CALL	1	2	P
PR	Y	PRELIM AMENDMENT	2/7/2000										
SE	Y	SMALL ENTITY STMT	2/7/2000										
US	N	U.S. FILING DUE	2/8/1999	12 M	2/8/2000		2/8/2000	0	2/7/2000	1 M	Y	Y	N
SPEC, DECL. (1) SHT INFML DWG, SES, ASSIG.													
DS	N	INF DISCLOSURE STMT	2/7/2000	3 M	5/7/2000	0	5/7/2000	0		1 M	Y	Y	N
CT	N	FILE RCT TO CORRECT	5/5/2000	14 D	5/19/2000		5/19/2000	0	6/20/2000	0 M	N	N	N
CF	Y	CORRECT OF FLG RCPT	6/20/2000										
PD	Y	PRIORITY DOCUMENT	8/11/2000										
PR	Y	PRELIM AMENDMENT	8/17/2000										
VV	N	PETITION TO REVIVE	5/7/2001	0 M	5/7/2001		5/7/2001	0		0 M	Y	Y	N
SC	N	STATUS CHECK	2/7/2000	18 M	8/7/2001	0	8/7/2001	0		1 M	N	N	N
OA	N	OWNER AMEND. PENDING	2/7/2000	60 M	2/7/2005		2/7/2005	0	2/7/2000	0 M	N	N	Y
R/F 10555/0225 BARCELONA, SPAIN													

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Fernandez Lopez, Miguel Angel;

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Segarra Rubik, Merce;

Chimenos Ribera, Josep Ma

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AN 2002:468201 HCAPLUS
DN 137:9429
TI Microalloying of **copper** with **lead** for ingot casting
IN Guixa Arderiu, Jose Oriol; Garcia Zamora, Miquel; Espiel Alvarez, Ferran; Fernandez Lopez, Miquel Angel; Esparducer Broco, Araceli; Segarra Rubik, Merce; Chimenos Ribera, Josep Maria
PA La Farga Lacambra, S.A., Spain
SO Span., 8 pp.
CODEN: SPXXAD
DT Patent
LA Spanish
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	ES 2160473	A1	20011101	ES 1999-254	19990208
	ES 2160473	B1	20020616		
PRAI	ES 1999-254		19990208		

AB Molten **Cu** for ingot casting is microalloyed with >200 ppm (esp. .ltoreq.500 ppm) **Pb** in the presence of minor (esp. 10-80 ppm) S, Se, As, Bi, **Sn**, **Zn**, **Ni**, **Fe**, **Ag**, and/or Te. The microalloyed cast **Cu** shows decreased temp. of recrystn., and increased elec. cond.